

What is claimed is:

1. An apparatus for describing three-dimensional image data, comprising:

5 a descriptor database for storing descriptors describing characteristics of the three-dimensional image data at an acquisition procedure, a representing procedure, and a display procedure;

10 a descriptor adding means for reading in a descriptor describing the characteristics of the three-dimensional image data inputted from outside at each step and adding the descriptor to the three-dimensional image data; and

15 a registration means for registering the three-dimensional image data with the descriptor endowed by the descriptor adding means in a three-dimensional image data database.

2. The apparatus as recited in claim 1, wherein the descriptor adding means includes:

20 an acquisition descriptor adder for reading in an acquisition descriptor that describes a step of acquiring the three-dimensional image data from the descriptor database and adding the acquisition descriptor to the three-dimensional image data;

25 a representing descriptor adder for reading in a representing descriptor that describes a step of representing the three-dimensional image data from the descriptor database and adding the representing descriptor to the three-dimensional image data; and

30 a display descriptor adder for reading in a representing descriptor that describes a step of displaying the three-dimensional image data from the descriptor database and adding the display descriptor to the three-dimensional image data.

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3. The apparatus as recited in claim 2, wherein the descriptor database includes an individual descriptor database that stores the acquisition descriptor for describing the step of acquiring the three-dimensional image data, the representing descriptor for describing the step of representing the three-dimensional image data, and the display descriptor for describing the step of displaying the three-dimensional image data.

10 4. The apparatus as recited in claim 3, wherein the descriptor database further includes an integrated descriptor database that stores integrated descriptors defined as a particular combination of the acquisition descriptor, the representing descriptor and the display descriptor, and

15 wherein the descriptor adding means further includes an integrated descriptor adder for reading in an integrated descriptor from the integrated descriptor database and adding the integrated descriptor to the three-dimensional image data.

5. A method for describing three-dimensional image data, comprising the steps of:

25 a) a descriptor adding unit recognizing characteristics of the three-dimensional image data at an acquisition procedure, a representing procedure, and a display procedure;

30 b) the descriptor adding unit reading in descriptors for describing characteristics of the three-dimensional image data at each step based on the recognition from a descriptor database;

c) the descriptor adding unit adding the descriptors to the three-dimensional image data; and

35 d) the descriptor adding unit registering the three-dimensional image data endowed with the descriptors in a

three-dimensional image data database.

6. The method as recited in claim 5, wherein, at the step a), the descriptor adding unit recognizes characteristics of steps of acquiring, representing, and displaying the three-dimensional image data and, at the step b), the descriptor adding unit reads in an acquisition descriptor for describing the acquisition procedure, a representing descriptor for describing the representing procedure, and a display descriptor for describing the display procedure based on the recognition.

7. The method as recited in claim 6, further including the steps of:

e) the descriptor adding unit determining whether there is an integrated descriptor defined as a particular combination of an acquisition descriptor, a representing descriptor, and a display descriptor; and

f) the descriptor adding unit reading in the integrated descriptor from an integrated descriptor database and adding the integrated descriptor to the three-dimensional image data.

8. A computer-readable recording media for recording a program that implements a three-dimensional image data description method in a three-dimensional image data description provided with a processor, comprising the steps of:

a) a descriptor adding unit recognizing characteristics of the three-dimensional image data at an acquisition procedure, a representing procedure, and a display procedure;

b) the descriptor adding unit reading in descriptors for describing characteristics of the three-dimensional image data at each step based on the recognition from a

descriptor database;

c) the descriptor adding unit adding the descriptors to the three-dimensional image data; and

d) the descriptor adding unit registering the three-dimensional image data endowed with the descriptors in a three-dimensional image data database.

9. The computer-readable recording media as recited in claim 8, further including the steps of:

e) the descriptor adding unit determining whether there is an integrated descriptor defined as a particular combination of an acquisition descriptor, a representing descriptor, and a display descriptor; and

f) the descriptor adding unit reading in the integrated descriptor from an integrated descriptor database and adding the integrated descriptor to the three-dimensional image data.

10. An apparatus for retrieving three-dimensional image data, comprising:

an input means for receiving data on characteristics of the three-dimensional image data from a user at an acquisition procedure, a representing procedure, and a display procedure;

a descriptor database for storing descriptors based on the characteristics of the three-dimensional image data at the acquisition procedure, the representing procedure, and the display procedure;

a descriptor abstraction means for abstracting out of the descriptor database a descriptor corresponding to the data inputted from the input means;

a descriptor comparison means for comparing the descriptor abstracted from the descriptor abstraction means with descriptors of three-dimensional image data stored in a three-dimensional image data database, and retrieving

three-dimensional image data matched with the abstracted descriptor; and

an output means for outputting the three-dimensional image data retrieved by the descriptor comparison means to
5 the user.

11. The apparatus as recited in claim 10, wherein the descriptor abstraction means includes an individual descriptor abstracter for abstracting individual
10 descriptors, which include an acquisition descriptor for describing a step of acquiring the three-dimensional image data, a representing descriptor for describing a step of representing the three-dimensional image data, and a display descriptor for describing a step of displaying the
15 three-dimensional image data, from the descriptor database.

12. The apparatus as recited in claim 11, wherein the descriptor database includes an individual descriptor database for storing the acquisition descriptor for
20 describing a step of acquiring the three-dimensional image data, the representing descriptor for describing a step of representing the three-dimensional image data, and the display descriptor for describing a step of displaying the three-dimensional image data.

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13. The apparatus as recited in claim 12, wherein the descriptor database further includes an integrated descriptor database for storing integrated descriptors each of which is defined as a particular combination of the
30 acquisition descriptor, the representing descriptor and the display descriptor, and

wherein the descriptor abstraction means further includes an integrated descriptor abstracter for abstracting out of the integrated descriptor database an
35 integrated descriptor corresponding to the data inputted

from the input means.

14. A method for retrieving three-dimensional image data, comprising the steps of:

- 5 a) receiving data on characteristics of the three-dimensional image data to be retrieved from a user at an acquisition procedure, a representing procedure, and a display procedure;
- 10 b) a descriptor abstracting unit abstracting a descriptor matched with the inputted data out of a descriptor database that stores descriptors matched with the characteristics of the three-dimensional image data at the acquisition procedure, the representing procedure, and the display procedure;
- 15 c) a descriptor comparison unit comparing the abstracted descriptor with descriptors of three-dimensional descriptors stored in a three-dimensional image data database and retrieving three-dimensional image data matched with the abstracted descriptor; and
- 20 d) an output unit outputting the three-dimensional image data retrieved by the descriptor comparison unit.

15. The method as recited in claim 14, wherein the characteristics of the three-dimensional image data to be
25 retrieved are inputted by the user at the image acquisition step, the image representing step, and the image display step in the step a) and

wherein the descriptor abstracting unit abstracts descriptors matched with the data inputted from the
30 descriptor database that stores the acquisition descriptor for describing the image acquisition step, the representing descriptor for describing the image representing step, and the display descriptor for describing the image display step in the step b).

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16. The method as recited in claim 15, further including the steps of:

5 e) the descriptor abstracting unit determining whether there is an integrated descriptor which is defined as a particular combination of an acquisition descriptor, a representing descriptor, and a display descriptor; and

f) the descriptor abstracting unit abstracting the integrated descriptor out of an integrated descriptor database based on the result of the step e).

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17. A computer-readable recording medium for recording a program that implements a three-dimensional image data retrieving method in a three-dimensional image data retrieving apparatus provided with a processor, comprising the steps of:

15 a) receiving data on characteristics of the three-dimensional image data to be retrieved from a user at an acquisition procedure, a representing procedure, and a display procedure;

20 b) a descriptor abstracting unit abstracting a descriptor matched with the inputted data out of a descriptor database that stores descriptors matched with the characteristics of the three-dimensional image data at the acquisition procedure, the representing procedure, and the display procedure;

25 c) a descriptor comparison unit comparing the abstracted descriptor with descriptors of three-dimensional descriptors stored in a three-dimensional image data database and retrieving three-dimensional image data matched with the abstracted descriptor; and

30 d) an output unit outputting the three-dimensional image data retrieved by the descriptor comparison unit.

18. The computer-readable recording medium as 35 recited in claim 17, further including the steps of: